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# The Tbilisi-Class Aircraft Carrier: Characteristics, Capabilities, and Limitations

An Intelligence Assessment

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# The Tbilisi-Class Aircraft Carrier: Characteristics, Capabilities, and Limitations

An Intelligence Assessment

This paper was prepared by  
Weapons Research Office of Scientific and  
Imagery Analysis; and Office of  
Analysis Office of Soviet

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May 1989

## The Tbilisi-Class Aircraft Carrier: Characteristics Capabilities, and Limitations

### Key Judgments

*Information available  
as of 1 May 1989  
was used in this report.*

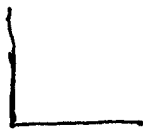
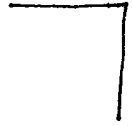
In 1985 the Soviets launched the lead ship of a class of aircraft carrier designated the Tbilisi. There are presently two ships of this class fitting out, and a third aircraft carrier, representing a new class of aircraft carrier, is now under construction. These ships are the largest Soviet surface combatants constructed to date. The Tbilisi-class carriers have an estimated full load displacement of 68,000 metric tons with a probable maximum speed of 29 to 30 knots and combine unique design features, including:

- An SS-N-19 or follow-on antiship cruise missile system underneath the flight deck.
- Four fixed planar-array radars similar to the US Navy's Aegis system.
- A ski-jump bow that will allow enhanced vertical/short takeoff and landing (V/STOL) aircraft operations or noncatapulted conventional takeoff and landing (CTOL) operations.
- Deck-edge elevators to aid in continuous takeoff and landing of aircraft, with an angled flight deck [

] The configuration of these ships suggests a mission design emphasis on anti-air warfare and on air battle management at sea. The carrier—with its anticipated formidable command and control capabilities—will be capable of managing air operations involving land-based aircraft operating over home waters, as well as providing protection to surface task forces operating outside Soviet home waters.

The overall configuration of the flight deck indicates that CTOL and V/STOL aircraft can operate from the new carrier. Despite its size and innovations, the ship is not expected to have the overall aerial combat capabilities of even the oldest aircraft carriers in service with the US Navy. Because of the carrier's configuration and apparent Soviet development of a variety of carrier-suitable aircraft, there has been some uncertainty as to which fighter will be deployed on the new carrier [

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The carrier will be ready for sea trials in the Black Sea in 1989 and should achieve initial operational capability (IOC) by 1991. The second ship of this class will probably require six years to complete and should commence sea trials in 1992. The third aircraft carrier probably will commence sea trials in 1995.

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## Contents

	<i>Page</i>
Key Judgments	iii
Scope Note	vii
The Ship	1
The Airwing	7
Outlook	11

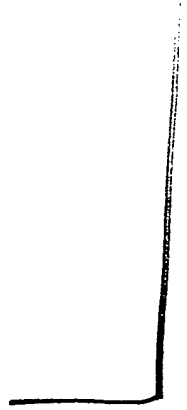
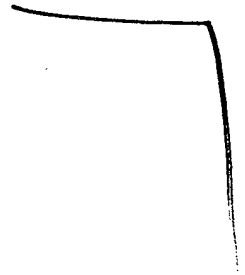
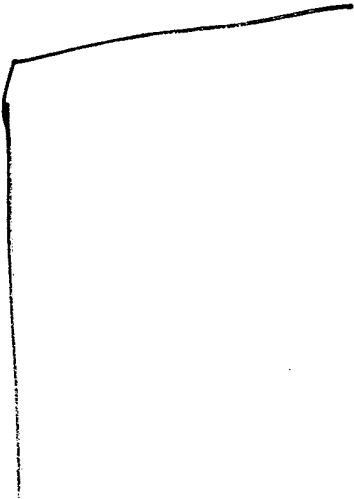
### Tables

1.	Characteristics of the Su-27 Flanker B and Yak-41	10
2.	Air-to-Air Missiles	10

Scope Note



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## The Tbilisi-Class Aircraft Carrier: Characteristics, Capabilities, and Limitations

### The Ship

In 1985 the Soviets launched the lead ship of a class of aircraft carriers [ ] Designated the Tbilisi, this ship and a second unit are presently fitting out. A third aircraft carrier, representing a new class of carrier, is now under construction. These ships are the largest Soviet surface combatants constructed to date. Once operational, these ships can support nearly any naval mission, including antisurface warfare, amphibious assault, and power projection. Their configuration suggests, however, that they are designed for emphasis on antiair warfare and on air battle management at sea. Although the carrier will most likely also have an aerial antisubmarine warfare capability, it will probably rely on other combatants for most of its submarine defense.

The Tbilisi—with its anticipated formidable command and control capabilities—will be capable of managing air operations involving land-based aircraft operating over Soviet home waters in wartime. It will also provide "combat stability"<sup>1</sup> to surface task forces operating outside Soviet home waters. The new Soviet carrier—unlike US carriers—will initially have neither the airstrike capability nor the flexibility for more than a nominal power projection effort. As a Soviet capital ship, however, the carrier should undergo numerous modifications over the course of its life cycle that should improve its offensive and defensive capabilities.

This ship has an estimated full load displacement of 68,000 metric tons and a probable maximum speed of about 29 to 30 knots. The Tbilisi also combines unique design features [ ] including:

- An SS-N-19 or follow-on antiship cruise missile system underneath the flight deck.

<sup>1</sup> Combat stability is, in its simplest form, survival. In this instance it means the men, material, weapons, and weapons platforms needed to ensure that the force remains secure from all threat.

- A ski jump bow that will allow enhanced vertical/short takeoff and landing (V/STOL) aircraft operations or noncatapulted conventional takeoff and landing (CTOL) aircraft operations.
- Four fixed planar-array radars similar to those found on the US Navy's Aegis system.
- Deck-edge elevators to aid in continuous takeoff and landing of aircraft.

- [ ] An angled flight deck similar to those found on catapult-capable ships "

We believe that the aircraft carrier's size results primarily from a requirement for a high level of survivability. This aircraft carrier—despite its size and innovations—will not have the aerial combat capabilities of even the oldest aircraft carriers in service with the US Navy [ ]

It is standard Soviet practice to heavily arm their air-capable ships with complementary offensive and defensive weapon systems. [ ]

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FIGURE 2  
THE TBILISI AIRCRAFT CARRIER



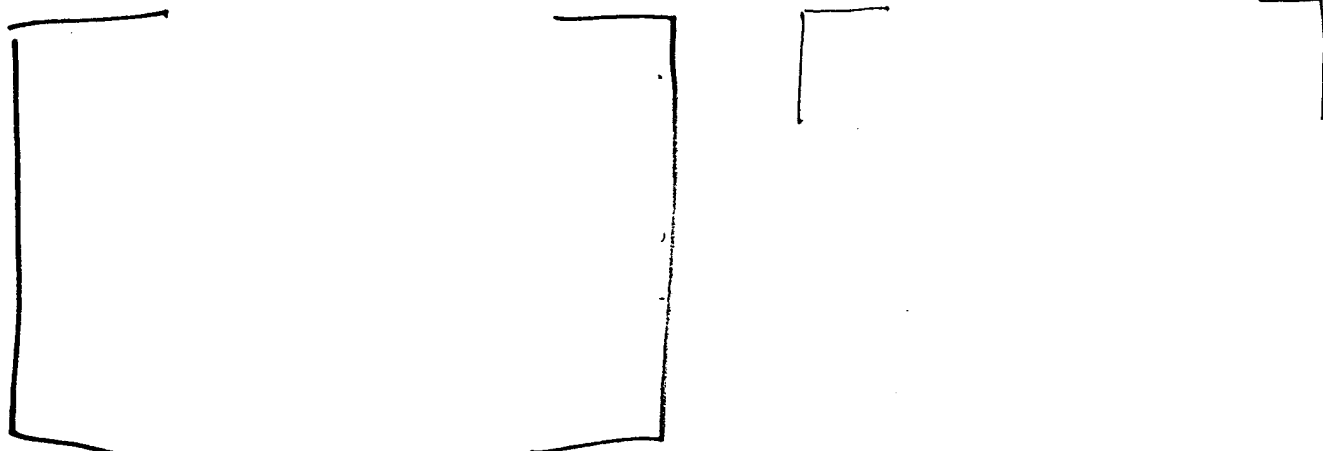
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
Figure 3  
Comparison of US and Soviet Carriers

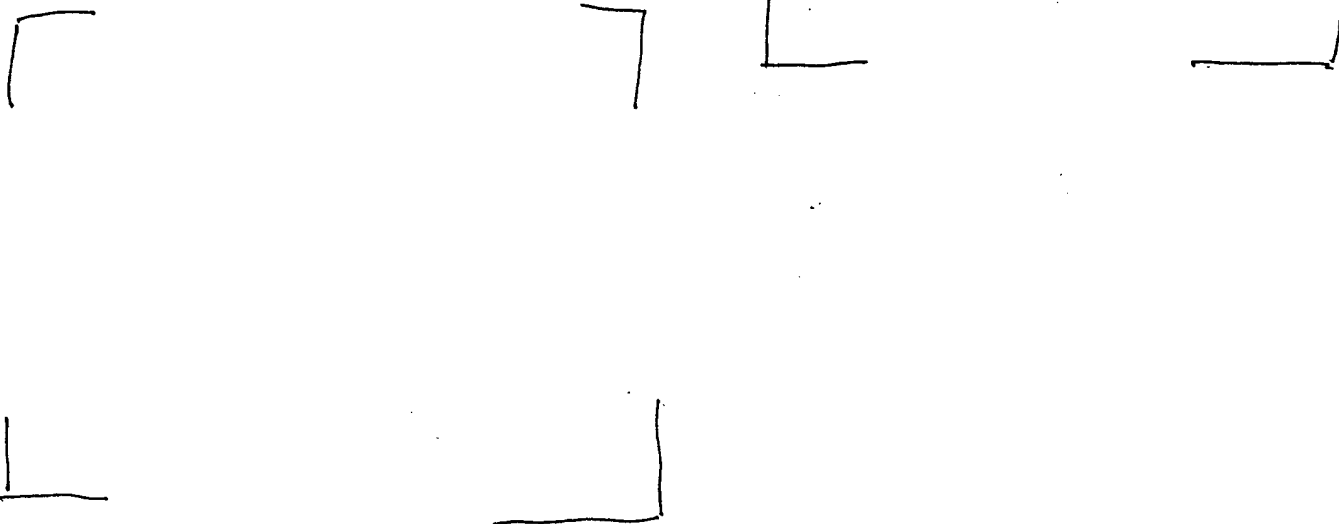
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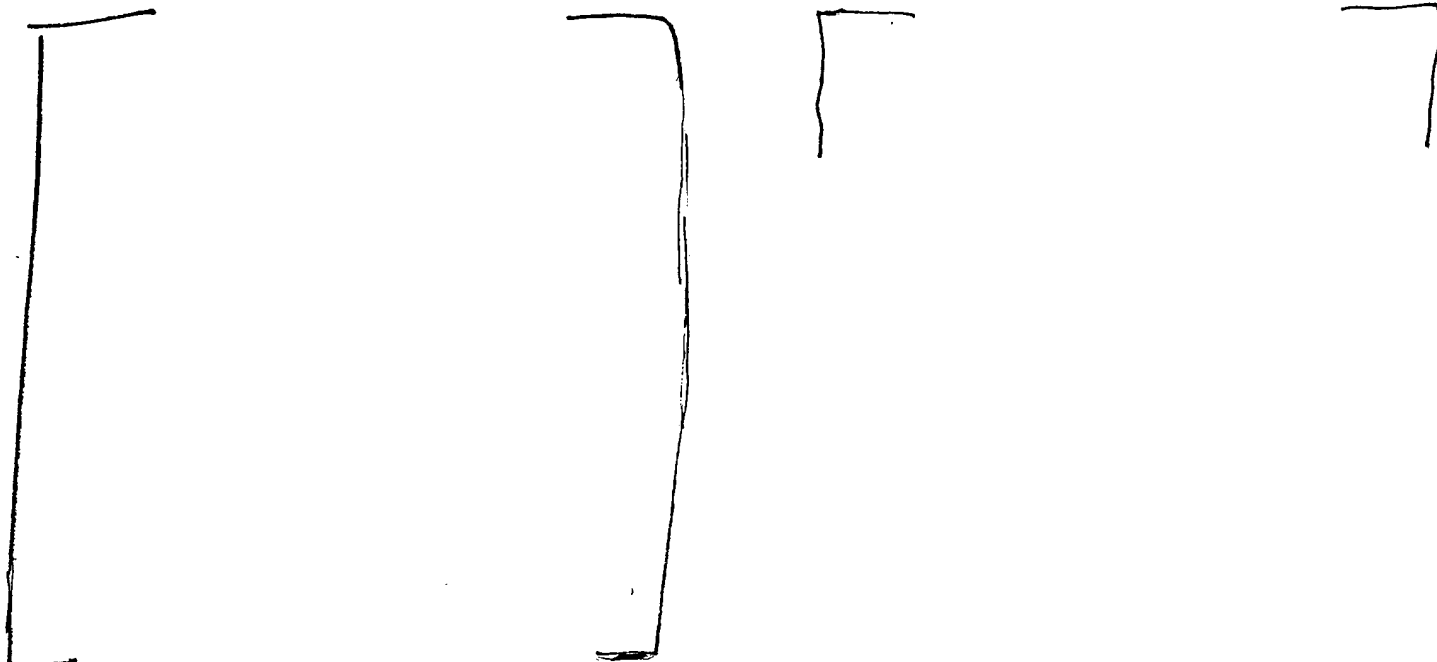
### The Airwing

The Soviets will require a modern, supersonic fighter with good maneuverability, advanced avionics, and the capability for all-weather operations at day or night. The overall configuration of the flight deck—with its complex angles, ski jump takeoff and separate landing areas,  and deck-edge elevators—indicates to us that both CTOL and V/STOL aircraft can operate from the carrier. This configuration—unusual from a Western perspective—and the apparent development of a variety of new carrier-suitable aircraft, had led to some uncertainty about the ship's eventual airwing

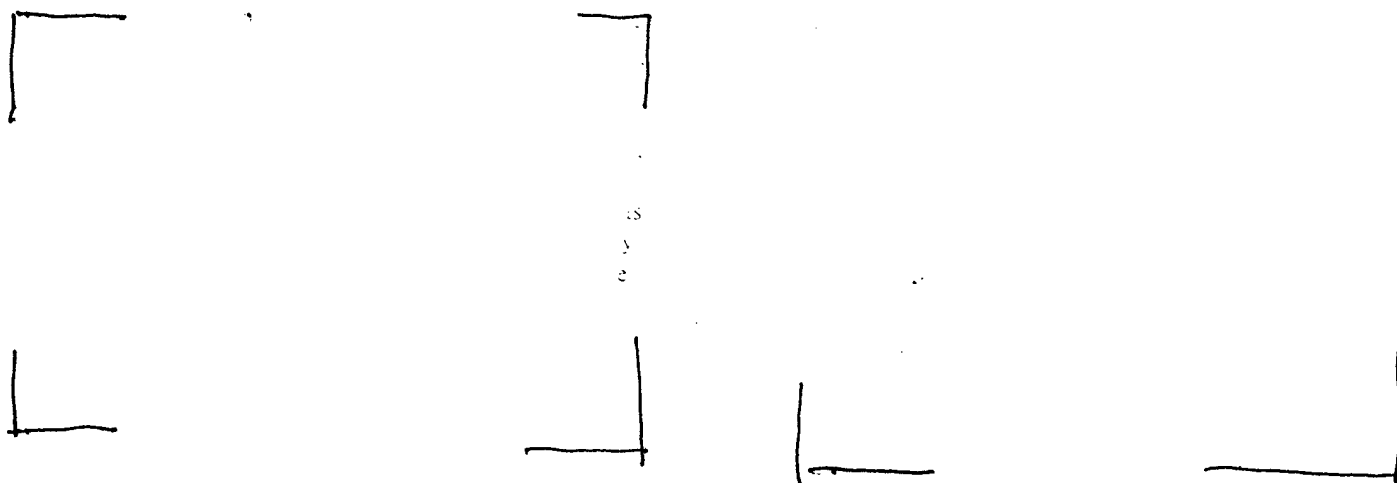


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The Soviets probably will not deploy a dedicated strike aircraft within the airwing of the carrier. Rather, the fighter aircraft deployed aboard the ship will have the capability to perform a secondary attack mission while retaining their full air-to-air capability.



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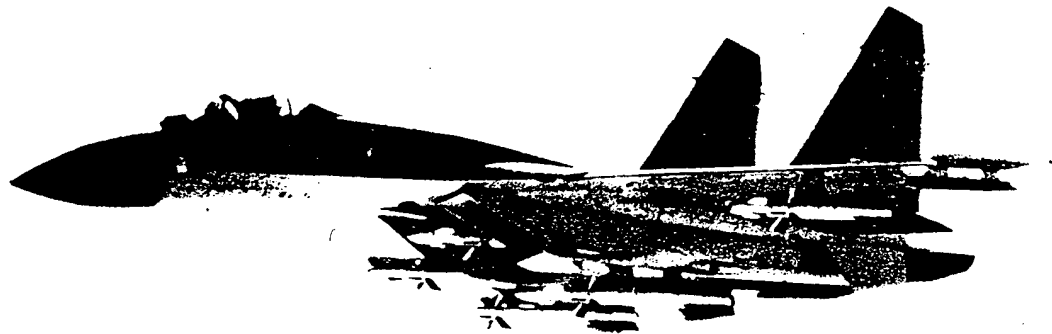


Figure 5. The Su-27 Flanker B

Figure 6  
The Su-27 Flanker B



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**Table 1**  
**Characteristics of the Su-27 Flanker B and Yak-41**



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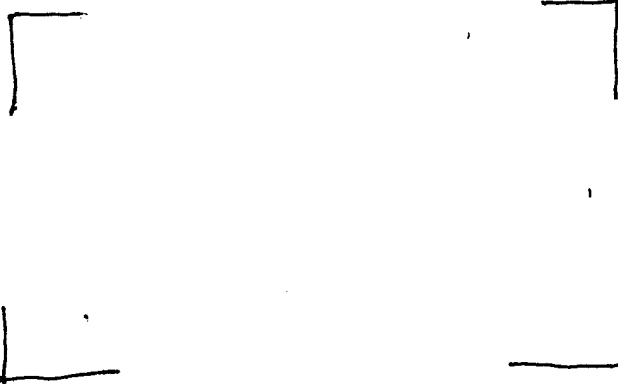
**Table 2**  
**Air-to-Air Missiles**



### Outlook

The first unit of the new carrier class will be ready for sea trials in the Black Sea in 1989-90 and should achieve IOC by 1991-92. The ship may be required to remain in the Black Sea from two to four years after sea trials to integrate the ship and airwing into a unified weapon system and to orchestrate operations aboard the ship. [

This situation should be resolved in about 1992, when, barring significant modifications during its construction, the second unit of this class should commence sea trials.







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